REMARKS/ARGUMENTS

This Amendment is in response to the Office Action mailed April 10, 2006. Claims 1-33 were pending in the present application. This Amendment amends claims 1, 3, 15, and 29; and cancels claims 2 and 17; leaving pending in the application claims 1, 3-16, and 18-33. Reconsideration of the rejected claims is respectfully requested.

I. Rejection under 35 U.S.C. §102

Claims 1-12, 14-26, and 28-33 are rejected under 35 U.S.C. §102(b) as being anticipated by *Lin* (US 6,389,379). Applicants respectfully submit that *Lin* does not disclose each element of these claims.

For example, Applicants' claim 1 as amended recites a method for simulating a system which comprises a software element, and first and second hardware components, the software element being for execution on the second hardware component, and the first and second hardware components being operable to interact with one another, the method comprising:

> simulating operation of the first hardware component in a first simulation in a hardware environment; and
> **simulating the software element and the second hardware component in a second simulation using a software model;**
> wherein the first simulation and the second simulation are implemented in separate processing threads, and
> **wherein the first and second simulation run asynchronously, the second simulation running ahead of the first simulation allowing for more rapid simulation of software instructions in the software model**

(*emphasis added*). Such limitations are not disclosed by *Lin*.

Lin discloses a coverification system including a reconfigurable computing system and reconfigurable hardware array (col. 7, lines 61-67), which allow a user to turn designs into hardware and software representations for simulation (col. 8, lines 1-4). While a simulation is typically either software or hardware, the hardware simulation can be accelerated using the software model and the software simulation can be accelerated using the hardware model (col. 8, lines 4-44). The coverification compiler partitions a user design into "control and evaluation components," then maps the control components to software and the evaluation components into hardware and software (col. 28, lines 5-13). A software model is generated for all HDL

components, regardless of component type, while a hardware model is generated only for certain hardware components (col. 28, lines 13-21; col. 30, lines 28-34). The user then can run the software simulation and hardware emulations concurrently, stopping either process at any time to inspect values for each component (col. 28, lines 34-45).

Lin does not disclose or suggest simulating only certain hardware components using a software model as recited in Applicants' claim 1. *Lin* also does not disclose or suggest running first and second simulations asynchronously, with the second simulation running ahead of the first simulation. *Lin* also does not disclose or suggest a method for allowing for more rapid simulation of software instructions in a software model for an embedded hardware component in a hardware environment. As such, *Lin* cannot anticipate or render obvious Applicants' claim 1, or the claims that depend therefrom.

Applicants' claim 15 as amended recites a method for controlling a simulation of a system using a software debugger, wherein the software debugger is connected to a software model of a second simulation, and a first simulation for a subset of hardware components is controlled through the software model of the second simulation, with the software debugger having no knowledge of the connection between the first and second simulations. *Lin* does not disclose or suggest such a limitation, such that *Lin* cannot anticipate or render obvious Applicants' claim 15 or the claims that depend therefrom.

Applicants' claim 29 as amended recites method for providing an I/O interface for a simulation model to allow the simulation of interactive programs, the method comprising:

> **simulating a software element using a software model in a first processing thread;**
> **simulating an embedded input/output device within the simulation model to produce an input/output device model in a second processing thread;**
> **connecting the input/output device model to a terminal emulator using an inter-process communications protocol;**
> **running an interactive program in the terminal emulator to transfer information to the input/output device model; and**
> **polling the input/output device model for the transferred information using the software model**

(*emphasis added*). *Lin* does not disclose or suggest the use of an input/output device model in contact with a terminal emulator running an interactive program, whereby information can be transferred to the input/output device model and subsequently obtained by a software model

through a polling procedure. As such, *Lin* cannot anticipate or render obvious Applicants' claim 29 or the claims that depend therefrom.

Applicants therefore respectfully request that the rejection with respect to claims 1-12, 14-26, and 28-33 be withdrawn.

II. Rejection under 35 U.S.C. §103

Claims 13 and 27 are rejected under 35 U.S.C. §103(a) as being obvious over *Lin* in view of *Kim* ("An integrated Hardware-Software Cosimulation Environment with Automated Interface Generation"). Claim 13 depends from claim 1, and claim 27 depends from claim 15, which are not rendered obvious by *Lin* as discussed above. *Kim* does not make up for the deficiencies in *Lin* with respect to claims 1 and 15. *Kim* teaches a cosimulation environment (Abstract; Introduction) and is cited as teaching use of a C model to implement a second simulation (OA p. 11). *Kim* does not, however, teach or suggest running first and second simulations asynchronously, with the second simulation running ahead of the first simulation as recited in Applicants' claim 1. *Kim* also does not teach or suggest a method for allowing for more rapid simulation of software instructions in a software model for an embedded hardware component in a hardware environment as recited in Applicants' claim 1. *Kim* also fails to teach or suggest a method for controlling a simulation of a system using a software debugger, wherein the software debugger is connected to a software model of a second simulation, and a first simulation for a subset of hardware components is controlled through the software model of the second simulation, with the software debugger having no knowledge of the connection between the first and second simulations as recited in Applicants' claim 15. As such, *Kim* cannot render obvious Applicants' claims 1 or 15, or dependent claims 13 and 27, either alone or in combination with *Lin*. Applicants therefore respectfully request that the rejection with respect to claims 13 and 27 be withdrawn.

III. Amendment to the Claims

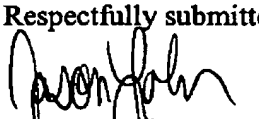
Unless otherwise specified, amendments to the claims are made for purposes of clarity, and are not intended to alter the scope of the claims or limit any equivalents thereof. The amendments are supported by the specification and do not add new matter.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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